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JAPANESE MEDICAL MATERIAL

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UNIT, MOBILE SURGICAL

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MEDICAL ANALYSIS SECTION
5250th Technical Intelligence Company
APO 500

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Unit, Mobile Surgical

SOURCE: Translation of original plans found at Tokyo, Japan.

IMPORTANCE: Not previously reported. Supplement to captured Japanese training films sent to Commanding Officer, Signal Corps Photographic Laboratory, Army War College, Washington, DC.

DESCRIPTION: The description of this unit is based on interviews with Lt Gen Shimizu, former head of Japanese Medical Supply Bureau, training films on the use of the unit, and the original plans of the unit confiscated from the Japanese Medical Department. This section has been unable to locate the unit itself but pictures were obtained which are included in the report.

A translation of the documents obtained is also included and these give a fairly complete description of the unit.

The basic unit consists of at least five trucks - two surgical trucks, one sterilizing truck, one x-ray truck and one medical supply truck.

The two surgical trucks are placed parallel and the sides open outward so as just to overlap. Then a prefabricated framework is placed between the two trucks and this framework covers the operating room.

The sterilizing truck is backed next to and connected to one of the surgical trucks so that the operating room and sterilizing truck become one complete, connected unit. The sterilizing truck is used to

autoclave surgical supplies and sterilize instruments, and is a source of water for the operating room.

The x-ray unit is placed in a tent close to the operating room. A standard portable field x-ray unit is carried in this truck (see Medical Technical Report No. 204). In early designs the truck was used as the source of power of the generator. More recently a 3 horsepower gasoline engine was used. This is the same type of engine included in the portable field x-ray reported in Medical Technical Report No. 204. The truck has built-in developing tanks and is used as the darkroom while the actual taking of the X-rays is done in the tent.

There is also an x-ray truck occasionally used with this unit in which the x-rays may be taken without setting up a separate tent.

Included in the basic unit is a medical supply truck which carries additional medical and surgical supplies for the care of the sick and wounded.

Sanitation trucks for cooking and showers and ward trucks can also be attached to the basic five trucks so that the unit may total as many as 8 to 10 vehicles.

COMMENT: The personnel for this unit are approximately five medical officers and 18 to 20 medical non-commissioned officers. This unit will handle and treat approximately 400 patients. It is usually attached to a field hospital (Medical Technical Report No. 165) where patients receive their post-operative treatment.

The unit is attached to the headquarters of a "Commissary Line" (communication service troops just behind the combat zone) and generally supports two to three divisions. Because of its extreme mobility it is used as an auxiliary hospital to provide additional medical personnel and supplies to divisional hospitals when needed. There is no corresponding field unit in the US Army Medical Department but its function would be a mobile evacuation hospital for a corps area.

This unit was widely used in Manchuria and China where the warfare was on open terrain with rapid shifting of the combat area.

From the limited examination possible of this unit, it seems to be a very complete and appropriately mobile medical unit for modern warfare in open terrain. The quality of the material utilized in composing this unit cannot be judged as the unit itself was never examined. However, the basic principles involved are excellent and worthy of further study.

Photographs: Fig. 1 - Surgical, sterilizing and supply trucks in position.
Fig. 2 - Surgical trucks with assembled operating room.
Fig. 3 - Method of aligning surgical trucks.
Fig. 4 - X-ray tent.
Fig. 5 - X-ray tent in process of erection.
Fig. 6 - Interior of sterilizing truck.
Fig. 7 - Kitchen trucks ready for operation.

5 Inclosures:

Incl 1 - Translation: Method of erecting surgical room, with drawing. (pp. 9 thru 12)

- Incl 2 - Translation: Method of handling sterilizing truck, with drawing.(pp. 13 thru 19)
- Incl 3 - Translation: Method of erecting X-ray unit, with 8 photographs.(pp. 20 thru 27)
- Incl 4 - Translation: Method of using x-ray apparatus, with 8 photographs.(pp. 28 thru 34)
- Incl 5 - Translation: List of contents of medical supply vehicle.(pp. 35 thru 38)



Fig. 1 - Surgical, sterilizing and supply trucks in position.



省軍陸

(會分古住灘縣庫兵婦國) 三九第國愛 車術手

Fig. 2 - Surgical trucks with assembled operating room.



Fig. 3 - Method of aligning surgical trucks.



Fig. 4 - X-ray tent.



Fig.5 - X-ray tent in process of erection.



Fig. 6 - Interior of sterilizing truck.



Fig. 7 - Kitchen trucks ready for operation.

TRANSLATION

INSTRUCTION BOOK ON ESTABLISHING AMBULANCE SURGICAL ROOM

Equipages are as follows;

Using two ambulances, A and B, make them into one unit. The ground plan for its construction is one separate sheet. The list of articles and the amount is listed on a separate sheet.

The order of its construction.

1. Selection of a Place:

In constructing the ambulance surgical room, level, dry, well aired grounds must be generally selected so that operation will not be hindered. After the selection is finished the surface of the ground should be leveled. If there are tree branches nearby which obstruct the light they must be cut.

2. Necessary Personnel:

Generally, in constructing the ambulance surgical room, there are 6 men (including 2 drivers) and 1 non-commissioned officer. The non-com will give the orders to the men only while constructing the ambulance surgical room.

3. Beginning of Operation:

First the commander will line up his men and have them call out by numbers. Then, with the direction of the wind and sun in mind, he shall fix the direction of the entrance. To start working, the command "commence" will be given. The commander will guide the A ambulance into position and bring it to a stop. The plumbines will be hung from the left front and back of the ambulance body. With these points as the main points, the parallel line with the wheel of the A ambulance will be taken with the use of a steel rod. After the line has been marked with a rope, the commander stands at the head of the rope and guides the B ambulance on the line. After the front and back of the ambulance are evened with the A ambulance, the equipment on both vehicles will be unloaded and placed in a convenient order.

4. Beginning Construction:

- a. By opening the side doors of both the A and B ambulances, examine whether the distance between the vehicles is right or not. The edges of the doors should just overlap. The roof braces are put up according to numbers and secured with pegs.
- b. Gauge the left to right level of the floor with a level. When leveling, use the jacks attached to both vehicles.
- c. When the level is attained, arrange the floor board accord-

- ing to the number. The floor surface will be leveled with the use of jacks, used in leveling the roof braces.
- d. Join the opened doors of the A and B vehicles and fasten them securely to the floor board.
 - e. Raise the roof gutter of both vehicles and fasten securely.
 - f. Insert all the trusses according to numbers.
 - g. Insert firmly the extremities of the gutters to the respective sides of the truss and tighten the wing-nuts for the regulating equipment at the front and rear of the truss.
 - h. Fasten securely in order the front of the main room.
 - i. Install solidly the metal roof ridge on the apex of the truss (number one to the front).
 - j. Arrange the roofing boards by the numbers.
 - k. Drag the front and rear roof boards (by the numbers) so that the matching members of both boards meet.
 - l. Cover the metal roof ridge with the cover metal roof ridge and install with pegs on both ends, and next cover both ends of ridge with both metal roof covers.
 - m. Hang transom type curtains on both upper doors. Lower part of curtains are fixed with rivets on both sides with button on both upper ends of doors.
 - n. Outside crevices in the planks and the door must be closed by hemp cloths.
 - o. In both vehicles, draw out holding roofs from the rear of the car a little, and prop up stairs and next install ends of them with pegs.
 - p. Take out the tents from the car and cover the ends of car and the holding roof. Join the tent and vehicle with the cord and install the holding roof completely.

5. Breaking up:

Reverse the construction order.

Illustrations:

Figure #1 The loading arrangements for the articles in the picture.

Figure #2 The ambulances parked in their fixed positions with the equipment laid out.

Figure #3 The arrangement as in the process of erecting.

Figure #4 Same as #3.

Figure #5 The installation in its final stages.

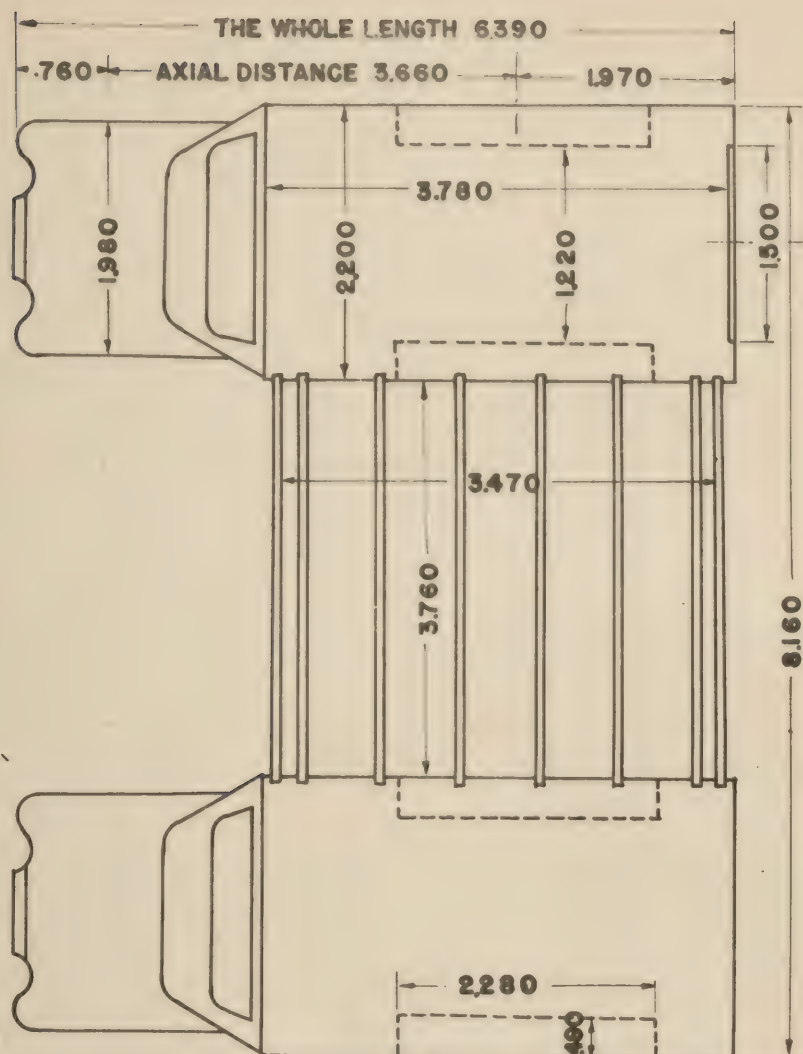
NOTE: The illustrations referred to above are not reproduced here. The original document, including diagrams, will be shipped to the Medical Department Equipment Laboratory.

TABLE OF EQUIPMENT

Article	Unit	No.
Operating Table		1
Wash Hand Basin	pr.	2
Tool Table, operating		2
Gauze Sterilizing Tank		2
Bottle, glass, 1000 cc		
Bucket		1
Canvas Bag		2
Desk, portable		2
Chairs		4
Gauze Sterilizer, large		6

Article	Total	A Amb.	B Amb.
Truss	4	2	2
Truss Connecting Rod	6	6	
Floor Brace	5	2	3
Metal Ridge	1		1
Ridge End Covers	2		2
Roof Boards, edge	4	4	4
Floor Boards	6	3	3
Roof Board Holders	2	2	
Box of Equipments	2	1	1
Box of Tools	4	2	2
Pitchforks	2	2	
Tape Measure	1		1
Sheet Iron	5		5
Auto Jack, heavy	8		8
Stakes, large	4		4
Floor Boards, Joint Support	5		5
Roof Span, Large	8		8
Hammer, metal	2		2
Hammer, Wooden	2		2
Gauge, iron	1		1
Floor Boards	12	6	6
Steps	1	1	
Wash Basin	2	1	1
Water Faucet	2	1	1
Tape measure	1	1	
Rake	2	1	1
Chimney, sections	6	3	3
Auto dome lights	2	1	1
Inspection Lights	2	1	1
Stretcher Stands	2	1	1
Wash Stands	2	1	1
Desk, Portable	2	1	1
Chairs, Portable	4	2	2
Brake Boards	8	4	4
Ladders	2	1	1
Cleaning Equipment, Chimney	2	1	1
Iron Stakes	98		98
Iron Hammer	1		1

THE DERELOPALE DRAWING OF THE OPERATING-CAR (METRE UNIT)



THE FLOOR AREA OF THE OPERATING-CAR (SIX WHEEL CAR)

	<u>LENGTH</u>	<u>WIDTH</u>	<u>AREA</u> (\square')
<u>IN CASE OF A SINGLE CAR</u>	3.7 8 0	2.2 0 0	64.056 (EFFECTIVE AREA)
<u>THE SECTIONAL FLOOR</u>	3.4 7 0	3.7 6 0	140.335
<u>IN CASE OF PARALLEL CARS</u>		8.160	268.468

TRANSLATION

METHOD OF HANDLING STERILIZING CAR APPARATUS

Operational Procedure

1. When gasoline or charcoal is used, it is preferable not to use a chimney. However, for coal or wood, a chimney is set up and firmly fastened with steel cables.
2. A rubber hose is connected to a fixed opening, the section pipe to a water source or a water tank outside the car, the sterilizing water pipe to the operating car, and the cooling pipe to the drainage tank.
3. Open the valve cocks on all the apparatus.

Water Storage Tank

Feed Water

1. Water is supplied by a hand pump. If cocks (K) and (L) are open, water is supplied to tanks (1) and (2).
2. When there is difficulty in supplying water with the hand pump, due to freezing in cold weather, the flooding cocks (1) and (2) above the chamber are opened and by using a funnel appropriately, water is supplied.
3. When there is danger of the tank freezing, and when the water in the sterilizing tank is hot, the cooling water may be heated and freezing prevented to a certain degree by opening valves (M) and (S) and cock (J) and operating the hand pump.

Sterilizing Apparatus

Feed Water

1. Valve (B) is opened until the gauge reads "full". Then it is closed.
2. During feeding, the valve is lifted by means of the safety valve lever and the air in the tank is removed.

Sterilization

1. The gasoline stove is ignited, the pressure run up to 135 Kg, and the temperature to 106°. For the method of handling a gasoline stove refer to (6)-Method of handling a gasoline stove.

2. The gasoline stove is taken out when wood or coal is used. During combustion, care must be taken in regulating the air inlet and the smoke stack and the amount of burning.

3. After the water in the sterilizing tank has been heated sufficiently, valve (D) is opened and the sterilizing water storage tank is filled by means of pressure from within the sterilizing tank.

Decontamination of the Sterilizing Water Pipes

1. Following steam from the sterilizer and opening valves (C), (O) and (M) the pipes are decontaminated. Open valve (P) or (Q) and besides decontaminating the tank, close each valve or utilize the steam from the gauge sterilizer. Open valves (T) (O) (R) sending steam thru pipe and decontaminating it. Open valve (P) or (Q) and after decontaminating the tank close each valve.

Condensing of Sterilized Water

1. In order to cool the steam in the sterilizer tank open cock (L) valve (M) (N) manipulate hand operated pump and after the water has cooled close each cock and valve.

2. In case of using the water which aids in cooling the sterilized water in the sterilized tanks (1) and (2) open cock (2) valve (N) (S) operate hand pump so that the passing water will circulate.

3. Distiller

Preparation

When using both apparatus the water distiller and the gauze decontaminator utilize something from both apparatus, and always analyze the steam and distilled water formed. Compare the use of both apparatus.

Making Distilled Water

1. In working the distiller, use the following method.

2. When using the distiller, open the valves (C) (H) when the steam from the sterilizer is lead through the distiller. Open the valves (G) (I) thereby passing the water through the condenser. By opening the outlet valve, the distilled water will drop out.

3. When using the gauze sterilizer open valves (T) and (H) and the steam from the gauze sterilizer is lead to the distiller. Open valve (G) and (I) allowing water to pass to the cooling tank and when the outlet valve is opened, distilled water will drop out.

4. Gauze Sterilization.

Place accumulated gauze in cylindrical decontaminator and fix lid firmly.

Water Supply

1. Open valve (Y) until the water level meter reads maximum on the scale and then close valve (Y).

During supplying of water, open slightly valve (U) cock (V) and eliminate air in the reservoir when finished, close valve (U) and cock (V).

Sterilizer

1. Ignite the gasoline furnace and when the manometer reaches 35 kilograms (red line scale regulates the fire so the pressure does not exceed 35 Kilograms).

2. When coal or fuel is used, compare the usage in forementioned water sterilizer.

3. When manometer needle reaches 35 Kilograms open valve (W) and steam the pipes to sterilize them. When completed close valve (W).

Drying

After opening cock (V) open valve (U) and pass steam through the air ejector. When dry, close cock (V) and valve (U).

Draining

After completing the sterilizing operation, extinguish the fire and open cock (X) and let it drain.

Caution

1. During drying operation regulate flame so that the steam pressure doesn't fall and pay heed to sterilized water.

2. When continuing sterilizing operation, drain the apparatus pipe beside the water supply. Begin the next operation.

Machine Decontaminator

Preparation

Take off cover clamp and open the cover. Put the contaminated things in a basket and into the apparatus.

Water Supply

Open valve (Z) until contaminated things in the basket soak. Then turn off valve (Z) and close the cover.

Decontamination

1. Ignite the gasoline furnace and boil to decontaminate.
2. In case coal or fuel is used compare the usage of forementioned water sterilizer.
3. When decontamination is completed extinguish the fire.

Draining

1. After completion of decontaminating operation open cock (A') and let it drain.
2. When the motor vehicle moves make certain that the cover clamps are on.

Gasoline Furnace

Preparation

Make certain that valves (B') (C') (D') and air valve are shut off.

Attention

1. Open the oil flow opening and ready for the oil to leak in and then allow gasoline to flow in.
2. When oil flow is required immediately after using the furnace, coal the fire bed before letting any in.
3. With an air pump, pump air into oil tank.
4. When the gasoline furnace has been used, expel air from the tank, before heating the heating pipe.

Before heating, open gasoline valve (C') and allow gasoline to flow into the heating plate. Then ignite and heat about a quarter of the pipes.

To Ignite

1. Open valve (D'). At the same time open valve (B') and if ignited, whole fire bed will ignite, regulate valves (D') (B') until flame turns blue.
2. At the same time open the air release valve and release air from the tank.
3. When using the gasoline furnace, open each air opening,

and close the smoke passage and air regulator to the proper opening to prevent loss of heat.

General Items of Caution

1. After using the apparatus take off chimney parts and without fail place them in their right places after cleaning.

2. When using each apparatus leave both water tanks filled with water.

3. The cock is open when the handle points in the same direction as the flow and closed when in a vertical angle position.

4. To close smoke passage air regulator turn right to 45° and turn left to 45° .

5. The cock valve is generally opened and closed slowly. Always leave it closed after using.

6. After each complete operation drain out completely and all the remaining water.

7. To remove the cover of the hand pump loosen nut (E'), tighten bolt (F'). The opposite is done to put it together.

8. When water is difficult to supply, store the water in the sterilized water tank and the coal water draining tank of the distiller so that it may be used again.

Mobile Sterilizer Equipment and Spare Parts

1. Water Storage tank	Cap.	125 liters
2. Hand pump	Cap.	800 lit/hr.
3. Water sterilizer	Cap.	60 liters
4. Distiller	Cap.	5 liters
5. Gauze Sterilizer	Cap.	15 liters
6. Machine decontaminator	Cap.	25 liters
7. Sterilized water tank	Cap.	45 liters
8. Gasoline furnace	Oil Cap.	5 to 6 liters
	Consumption	1 to 5 liters
9. 1 pipe	diameter 38mm	length 10 meter
2-Sterilized water pipe	Diameter 25 mm	Length 2.5 meters
1-Sterilized water pipe	Diameter 25 mm	Length 13 meters
1-Water cooler	Diameter 25 mm	Length 3 meters
1-Water tank	One piece make	
10. Work tools		
Screw driver	36 cm & 27 cm, one of each	
1-Shears	19 cm	
Armor inside measurement	25cm shape-triangle, half round 1 of each	

Hammer 1 and 1½ lb, one of each

Spanner 20cm one and 25cm two; total of three.

1-Pipe wrench 33cm

Both spanners 1/4" x 3/15", 3/8" x 1/2", 1/2" x 5/8", one of each

1 plier 20cm

11. Firing equipment

1 shovel

1 fire raker

1 ash raker

1 chimney sweep brush

12. Spare Parts

1 funnel, metal type

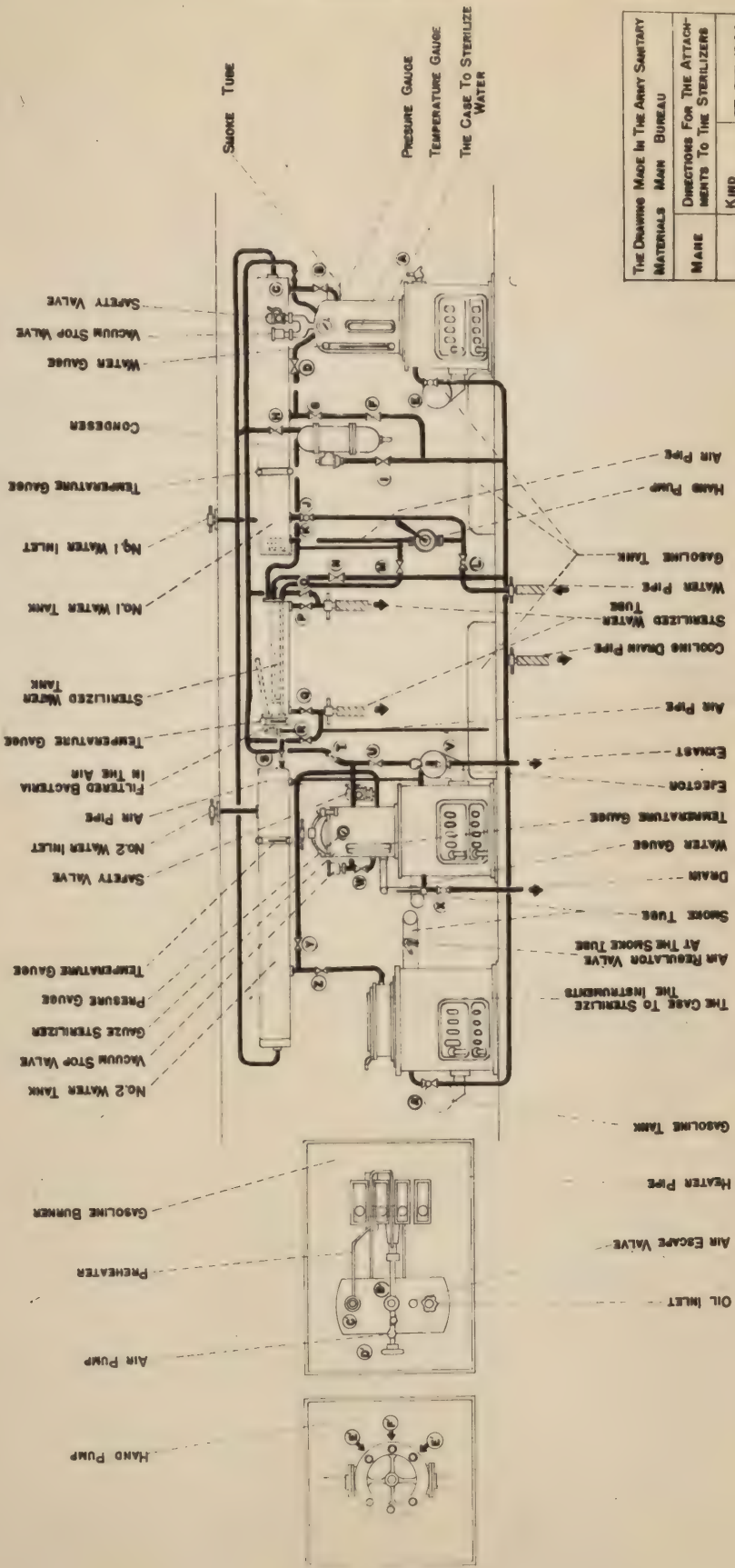
1 pump

Glass water measure instruments attachments 2 apiece total of 10.

Base cover and handle, each measurement 5 of each total of 25.

2 piece 0 packing board.

DIRECTIONS FOR THE ATTACHMENTS TO THE STERILIZERS



The Drawing Made In The Army Sanitary Materials Main Bureau			
Directions For The Attachments To The Sterilizers			
Kind	No.	27 SEP 1944	
Member	No.		
Leaded		Draft Man	

Inclosure No. 3

TRANSLATION

EXPLANATIONS ON ESTABLISHING "ROENTGEN" VEHICLE

USED FOR MEDICAL PURPOSES

Establishment Procedure

I Selecting a Site

In order to establish the "Roentgen" vehicle, a level section of arid land that does not hinder operations is generally chosen and after the site is selected the necessary leveling is done.

II Required Personnel

Ordinarily, in establishing the "Roentgen" vehicle, 5 persons are required, one of whom is the driver.

III Initial Operation

The commander must take into consideration the road that is being used and will decide and designate the direction of the entrance. At the time when the work is to begin, he will give the command "commence".

IV Establishment

1. First, open the door connecting the driver's compartment and the main compartment and after entering the main compartment, unlock the doors on the side and the rear. The doors can also be opened from the outside.

2. Unload the assembled materials from the interior to a suitable place where they can be easily assembled later.

3. Insert the three plate supports in the body of the vehicle and attach the plates (two of which are of the assemblage type).

V Points on How to Set Up the Tent

1. In setting up the tent, select a relatively level portion of ground and place the "Roentgen" vehicle in a fixed position.

2. Take the tent and its accessories outside and unwrap the bundles.

3. Install the plate supports on the outside of the vehicle and place the bracing poles in their respective positions.

4. Place the roofing tent over the plate poles and tighten the tent body by fastening a bracing rope to the bracing pole.

5. Attach the inner tent to the nooks of the outer tent and fasten to the cross beam with a cord. Attach the side flaps to the roofing tent by using cords and tying the flaps to the roofing tent "fog neutralizer".

6. In striking the tent the same procedure in reverse will be employed.

7. An inventory of the tent and its accessories will be made, placed in the proper bundles and tied.

8. One person of the five required to erect the tent will be responsible for the inspection of tent materials and their allocation. He will also be responsible for the accessories and expenditures.

CHART ON THE TOTAL NUMBER OF PARTS WHICH COMPRISE THE
ASSEMBLAGE OF THE "ROENTGEN" VEHICLE

<u>Article</u>	<u>Quantity</u>	<u>Notes</u>
Steel construction posts	5	Used for wall tent
Jacks - attached to car body	4	
Steel base plates for jacks	4	
French, large, for jacks	4	
Chocks, triangular	6	
Mats, wooden	6	
Desk, portable	1	
Stretcher	1	
Stairs	1	Portable, iron
Chairs	2	Portable
Ladder	1	
Foot Stool	1	
Mat, willow	1	Four small mats in one
Posts, wooden	10	Bags on both ends
Post, round, wood	1	Two combined
Heater	1	Burns coal, wood or charcoal, Chimney, poker, shovel, grate contained in box.
Lamp, table	1	Case in driver's com- partment
Lamp, inspection	1	" " " "
Fire extinguisher, pistol-type	2	Driver's compartment
Tent, roofing, outer	1	Cover attached
Roof, inside, canvas	1	Cover attached
Screen, black	2	" "
Canvas, outside, (lengthwise)	2	" "
Celluloid plates	8	" "
Posts, bracing	10	" "
Pegs, bracing	40	" "
Ropes, bracing	10	" "
Hammer	1	" "
Tool box	2	" "
Accessory box	1	" "
Mat cover	1	

CONTENTS OF THE "ROENTGEN" VEHICLE

<u>Article</u>	<u>Unit</u>	<u>Total Amt</u>	<u>Summary</u>
Field X-Ray Machine	1	1	
Tent	1	1	

Appended Picture #1

The situation wherein the vehicle has been placed at the designated spot.

Appended Picture #2

The situation as explained in #1 and #2 under "Establishment" and also wherein the mat for the steps has been laid.

Appended Picture #3

The situation is explained from 1 thru 5 under "Points on how to set up the tent".

Appended Picture #4

The situation as explained in 5 under "Points on how to set up the tent".

Appended Picture #5

The situation wherein the large rear door is opened the assembly-type steel support is installed.

Appended Picture #6

Accessories on the "Roentgen" vehicle (with the exception of the field X-Ray machine).

1. Ladder
2. heater
3. Interior Canvas
4. Tent
5. Chairs
6. Foot Stool
7. Stretcher
8. Black Curtain
9. Wooden Poles
10. Pegs
11. Bracing posts
12. Lighting Panel
13. Desk, portable
14. Steps
15. Wooden plate used as a mat
16. Trenches, for the jack
17. Steel construction posts
18. Mat, made of willow
19. Accessory box
20. Tool box
21. Mat Cover
22. Pistol-type fire extinguisher
23. Chock, triangular
24. Inspection Lamp
25. Hammer
26. Steel plated base for the jack
27. Table lamp
28. Round post

Appended Picture #7

Different parts of the Type 1 Heater:

1. Bracing Rope
2. Body of Heater
3. Grate
4. Reverberator
5. Poker
6. Fire shovel
7. Round disc used as base for stove body
8. Post
9. Chimney
10. Storage box

Appended Picture #8

The situation wherein the heater that is used in the "Roentgen" vehicle has been assembled.

- 1-15. Chimney
16. Bracing Rope
17. Post
18. Reverberator
19. Body of Heater
20. Poker
21. Fire shovel

I. In erecting the main tent, the "Roentgen" vehicle will be placed in a designated position after a relatively level portion of land has been selected.

II. Remove the tent and its accessories from the vehicle and unwrap the bundles.

III. First install steel rods on the outside of the "Roentgen" vehicle and allocate such things as the posts and ropes in the positions determined.

IV. Place the roofing tent on the steel rods, set the supports up in a square, attach the ropes to the posts and tighten the tent.

V. Hang the inner tent on the hooks outside of the roofing tent and tie the ropes to the crossbeams. Tie the side flaps to the roofing tent.

VI. The tent is generally dismantled in reverse of the manner in which it is set up.

VII. The tents and accessories will be placed in the proper bundles, checked and then tied.

VIII. The number of personnel necessary to put up the tent is usually five. One of whom is charged with the inspection and distribution of tent materials, the receipts and expenditures, and is responsible for the accessories.



Figure #1



Figure #2



Figure #3



Figure #4



Figure #5



Figure #6



Figure #7



Figure #8

Inclosure No. 4

Use of Mobile X-Ray Machine

I. Outline

This X-Ray machine is used within the truck and one side of the truck body is equipped for supporting the fluorescent screen and the X-Ray generator.

Photo #1 shows the complete machine: X-Ray generator (1), Control box (2), timer (3), ground rod and wire (4), hand held fluorescent screen (5), X-Ray generator (reserve) (6), X-Ray generator supporting stand (7), and fluorescent screen and stand (8).

II. Explanation of Parts

Photograph #2 - X-Ray generator

The maximum usable voltage is 60 KVP and the X-Ray tube amperage should be fixed at 30 MA for a one second period. The high voltage transformer, transformer for heating the cathode of the X-Ray tube and the X-Ray tube are enclosed in a metal box (1). (2) is the connecting plug, (3) is the shutter, and (4) indicates the location of the X-Ray tube. If the generator holding arm is used as the axis, do not use the control knob and operate it stationary.

Photograph #3

Switch for heating cathode of X-Ray tube (1).

Meter indicating heating current (2).

X-Ray tube amperage meter (3).

Input voltage button (4). While pushing the button, read the red figures on the meter indicating the heating amperage. The figures indicated will give the input voltage.

Dial (5) regulates heating amperage which can be regulated minutely.

Secondary voltage regulating dial (6). When the input voltage is 100 volts, the 50, 55, and 60 KVP taps are generally used, with the 60 KVP taps generating the maximum voltage. The point where the maximum voltage is obtained in the event the original voltage drops, is either the 90 or 95 volt tap. Furthermore, the 60 KVP tap is used when necessitated by the objective of the X-Ray picture or fluoroscope. A strong secondary voltage drops to 95 volts and the knob is set at 95, or when the voltage drops to 90 volts and the knob is set at 90, the same as when the voltage is 100 volts and the knob is set at 60KVP.

Fuse container (7) is made so that it can be inserted into the power input and easily taken apart.

Ground connection (8).

Automatic timer (9) is sealed from 1/2 second up to 6 seconds. The indicator hand (1) is turned to the necessary time of exposure. The white button is used for breaking the circuit, symbol (v), the button (v), symbol (v) is pushed after the time has been set. This starts the generation of high voltage and exposes the X-Ray. When the indicator reaches zero the circuit is automatically broken and the X-Ray exposure terminated.

Photograph #4

Input socket (1), socket for timer plug (2), outlet plug socket for X-Ray generator (3), ground pole and ground wire (4). As much as possible select a place outside the truck that is damp (if no appropriate spot is available, a location where water can be run) and sink the ground pole over two-thirds of its length. Connect the ground wire to the ground terminal of the control box securely.

Photograph #5 and #6

One X-Ray generator is kept in reserve.

X-Ray generator mount and the fluoroscope mount move up and down together. (1) of picture #5 is the knob which controls vertical movement. However, the distance of the generator fluoroscope is regulated by the generator mount arm screw (2), and the horizontal movement is controlled by the generator hanger (3) of the mount arm.

The indicator needle of the regulating scale (6) of the attachment point will be set at 80 degrees and the knob (4) tightened. After that, the arm is set at an angle to the mount. The generator hanger (3) will be set on the 80 degree scale and the knob (5) tightened. The distance from the generator to the screen will then be 80 centimeters.

In the event the distance is to be 60 centimeters, the regulating scale (6) of the attachment point will be moved forward to the 60 reading and the X-Ray generator hanger will be moved to its foremost position and tightened. In the event that the distance is to be 100 centimeters, the scale will be brought back to the 100 marker.

Photograph #7 - Fluoroscope mount

Similar to the generator mount is the vertical movement control knob (1) and the attachment point directional control Knob (2).

Screws (4) of the fluoroscope are for removing the mounting spindle (3). On the back of the mounting spindle, a film spindle is attached, as is a receiving neck (5).

Photograph #8

When back mounts are not in use, disconnect the generator and fluoroscope and place them against the wall as shown.

III. Procedure for operating X-Ray generator

1. Opening the switch: In this case, if the input voltage button atop the control box is pressed, the amperage will be indicated on the (upper) scale of the heating amperage meter (2).
2. The cathode heating switch will be switched (on). If the switch is opened to (on), the heating amperage will be indicated on the lower scale of the heating amperage meter.
3. With the filament amperage control knob, regulate the heating amperage (approximately 2.3 amps).
4. After turning the secondary voltage regulator knob from (0) to (50 KVP), the secondary amperage meter (3) will register approximately 3 milli-amperes when the button (4) of the automatic timer is pressed and the X-Ray will generate.

Furthermore, when taking pictures, after placing the indicator on the appropriate time of the timer, press down on the button (A). However, the filament heating amperage must be adequate for the X-Ray tube amperage.

5. Although the emission of the X-Ray will automatically cease when the indicator of the timer reaches the zero point, it may be stopped at a prior point by pressing the button (A).

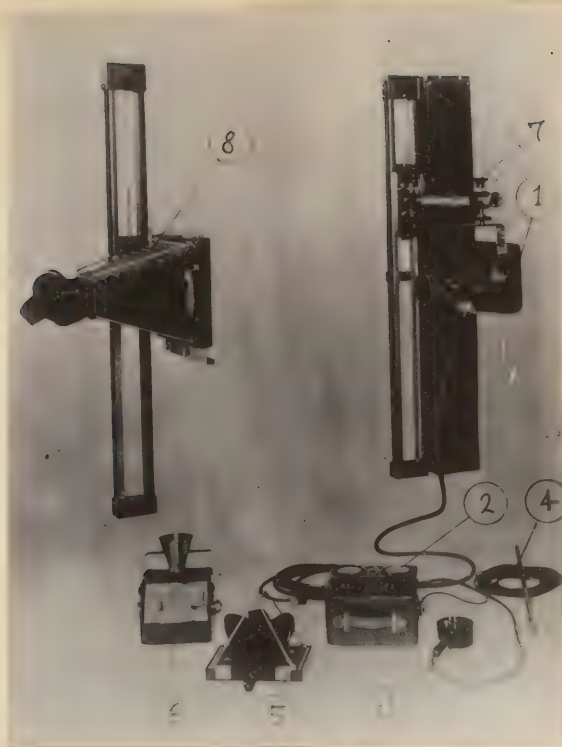


Figure #1

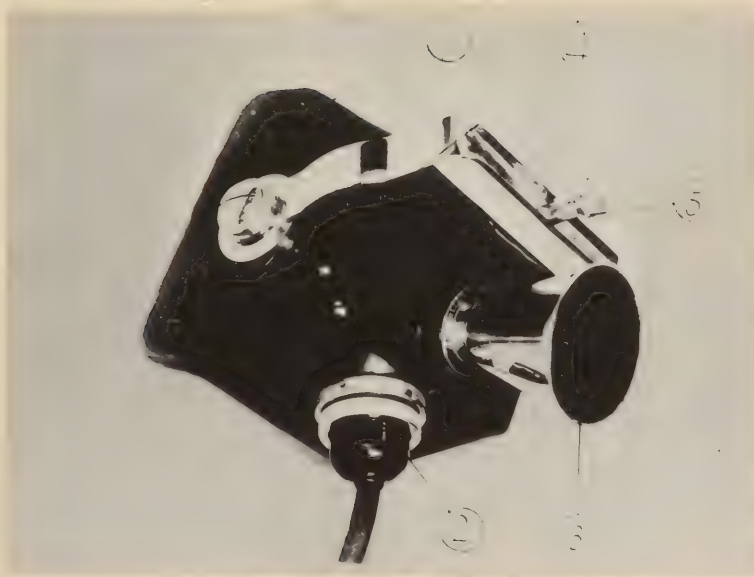


Figure #2

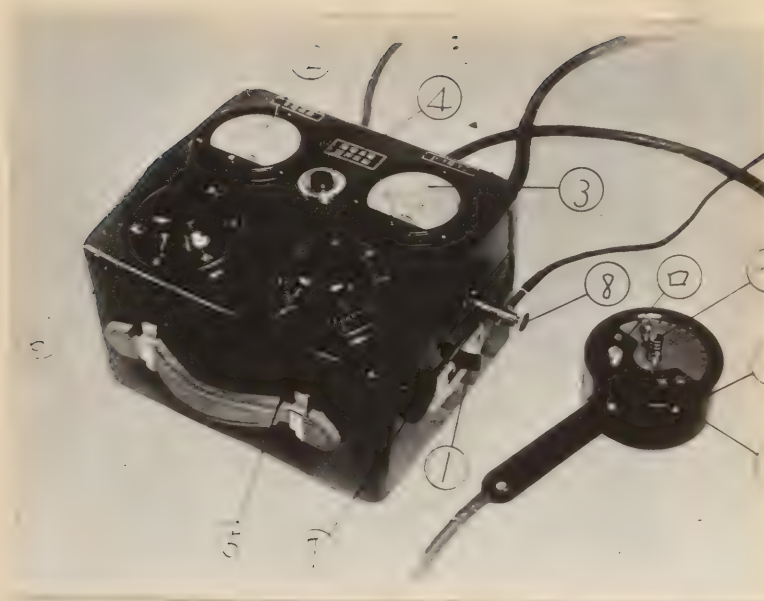


Figure #3

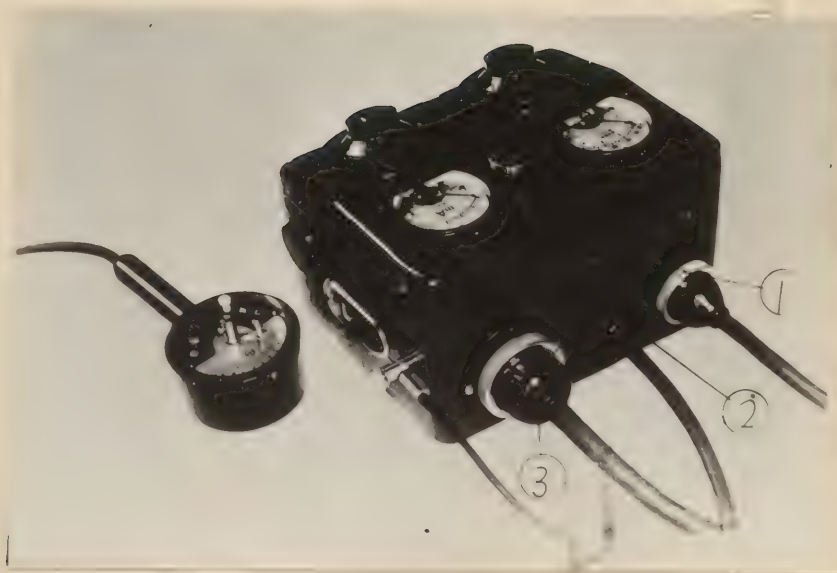


Figure #4

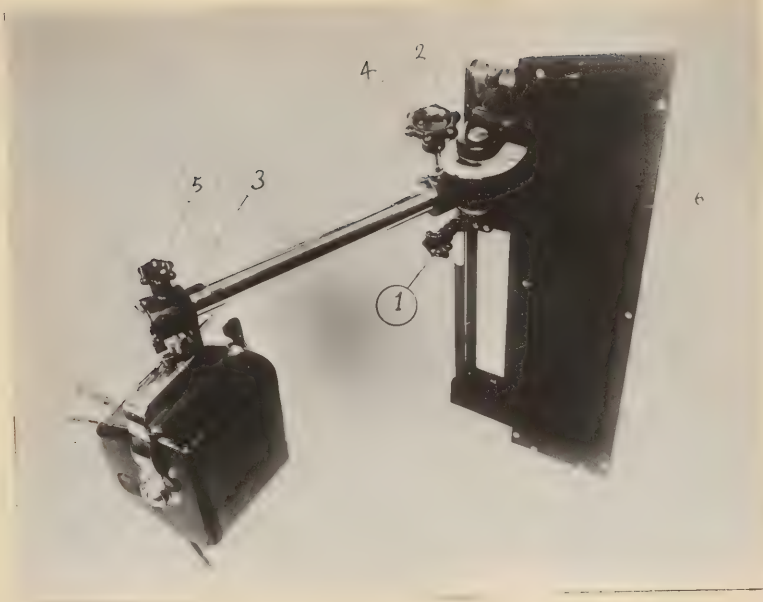


Figure #5

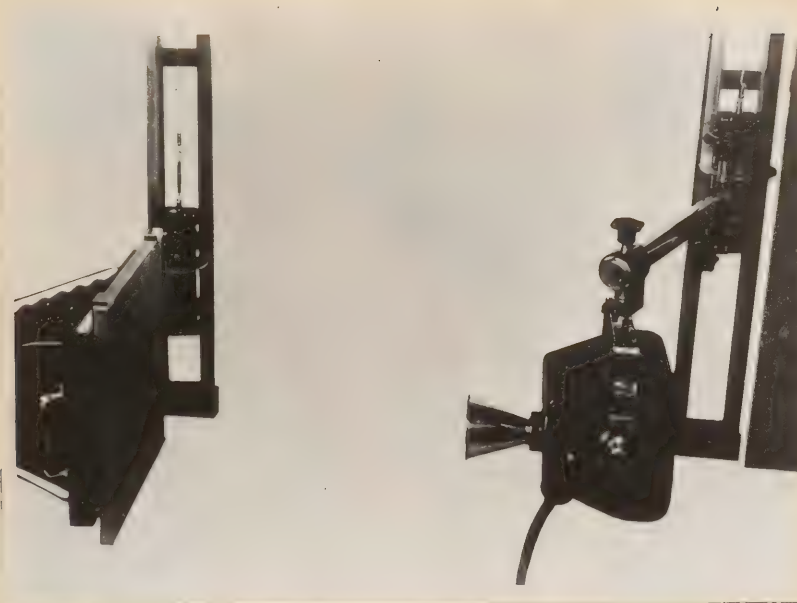


Figure #6

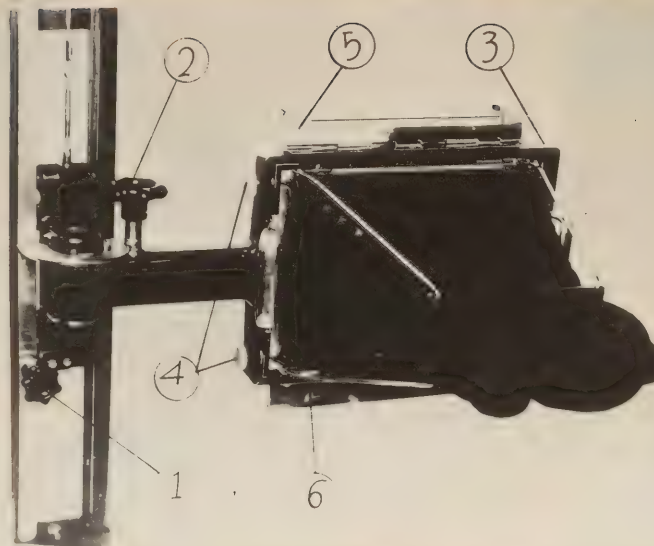


Figure #7

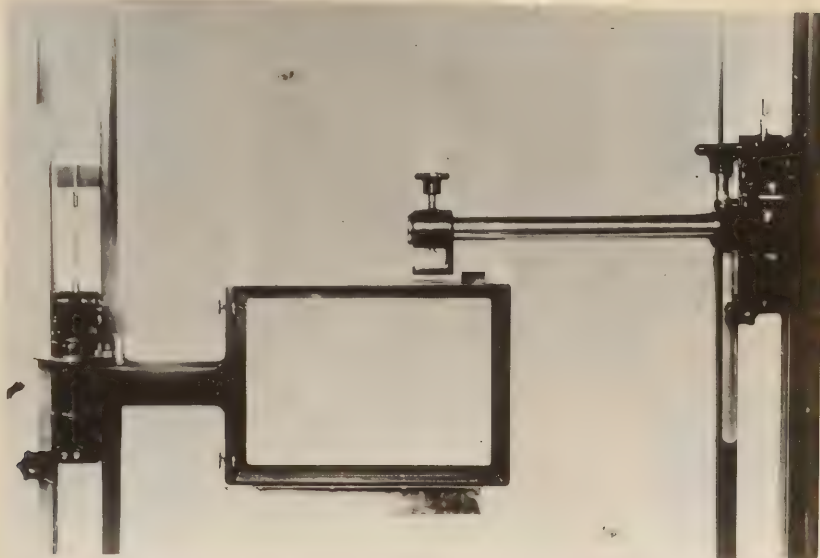


Figure #8

Inclosure No. 5

TRANSLATION

TABLE OF EQUIPMENT IN THE MEDICAL PANNIER OF A MEDICAL CAR

<u>Name</u>	<u>Box No.</u>	<u>Total</u>
Graduate 10cc .	7	1
Graduate 100cc	7	1
Repair Tools, Bag	7	1
Ophthalmic Apparatus, Small	1	1
Sprinkler, water	2	1
Electric Torch	4	6 (Spare Lamps & Cells)
Dinner Sets, spoon, dishes	3	30
Thermometer	1	2
Tin Cutter	7	2
Splint (chin)	1	5
Aspirator, field	3	1
Metal Catheter	2	1
Glycerin Enema Syringe	2	1
Surgical Instruments No. 1	1	1
Surgical Instruments No. 2	1	1
Surgical bag	1	1
Blood-vessel operating apparatus	2	1
Polishing apparatus	7	1
Rubber Gloves	1	6
Rubber Tourniquet	2	5
National Flag	4	1
Fatigue-Dress	7	8
Scissors	2	2
Spoons	7	4
Portable baskets	8	2
Dental kit	1	1
Laryngology apparatus	3	1
Chamber	4	3
Steam Sterilizer	2	1
Glass Chamber	4	3
Operating Gowns	2	16
Salt Injector	1	2
Glass Bottle	2	2
Red Cross Flag	4	2
Red Cross Light	4	1
Search Light	4	4
Injection syringe 5cc	4	4
10cc	4	4
20cc	1	1
50cc	2	2
Clinical Thermometer	1	10
Stethoscope	2	1
Razor	1	1

Mortar, glass	7	2
Catheter, Neraton	1	2
Dish	2	3
Cork Stopper	7	2
Analytical Balance	7	1
Brush Case	3	1
Hypodermic Syringe	2	5
Ice Bag	4	10
Splints, upper	5	5
Splints, lower	5	10
Anaesthetic case	1	1
Tape Line	2	2
Kettle	8	2
Blood Transfuser	3	1 Komiyama Type
Lamp	13	2
Tourniquet, screw type	2	5
Platinum	2	1
Funnel	8	2

Table of Medicines

Sticking Plaster	9	15
Acrinol, tablet	9	1000
Atmapin, tablet internal use	9	10
external use	9	10
Antka, tablet	9	10
Arsenious acid	1	1
Veronal, tablet	9	100
Ether	9	8 Anaesthesia
Eprenamin, solution, gr.	9	50
Oxdole	9	1000
Calmotine, tablet	9	30
Camphor, solution	9	100
Cod Liver Oil, ointment, gr.	9	200
Gasoline, gr.	9	1000
Soft Soap, gr.	10	500
Cardazole, solution	9	50
Dry Serum for Diptheria	10	2
Serum for Gas Gangrene	10	5
Standard Dry Serum, box	10	1
Gypsum, grams	10	4500
Glycerin, grams	10	200
Ethyl Chloride	10	5
Chloroform	9	10
Sodium Citrate	10	5
Clauden 1.0cc	10	50
Clauden 2.5cc	9	100
Cocaine, tablet	9	30 External
Codeine, tablet	9	100
Ginger oil, gr.	9	200
Baking Soda, tablet	10	200
Alcohol, gr.	9	300
Corrosive sublimate, tablet, gr.	10	500
Sodium chloride, tablet	9	500
Strophanthin	9	60
Benzene	9	200

<u>Name</u>	<u>Box No.</u>	<u>Total</u>
Medicine, to assist blood coagulation	9	50
Sodium bicarbonate, gr.	9	1000
Digitalis, solution	9	100
Digitalis, tablets	9	100
Aloes Oil	1	1
Tropa Cocaine	10	30
Trypaflavin, tablets	9	100
Nalsco, solution	9	20
Novacaine	9	50
Dry Serum, tetanus, bottle	10	5
Vitacamphor, solution, gr.	9	300
Pizitorin	9	50
Dextrose, solution	10	20
Boric acid ointment, gr.	9	200
Boric acid	10	400
Phoprole Cream	9	100
Chlorine, tablet	9	100
Germicidal Gelatine	9	10
Morphine, gr.	9	100
Wine, medicinal, gr.	9	400
Tincture of iodine, gr.	9	600
Tincture of iodine, large bottle	10	100
Liquid Phenol	9	200
Rizol, gr.	9	1,500
Sulphuric Cement	1	1
Distilled Water, gr.	9	1,000
Lobeline, liquid, gr.	9	50
Vaseline, gr.	9	200

Table of Consumption Goods in the Medical Pannier of the Medical Car.

Rope, hemp	14	25
Thread, hemp	10	50
Safety Pin	1	200
Hemp, gr.	14	200
Surgical Brush	7	5
Gauze, tan	2 & 13	150
Bandage, rolled, No. 1	1 & 11	250
No. 2	1 & 12 & 13	600
No. 3	1	60
Tube Pine	2	2
Thread, silver No. 1	1	20
No. 2	1	20
Thread, silk No. 1	1	5
No. 4	5	5
No. 6	10	10
No. 7	10	10
No. 9	3	3
Rubber Pipe	1	2
Finger cot	1	10

<u>Name</u>	<u>Box No.</u>	<u>Total</u>
Bag, rubber	4	10
Triangular Bandage	13	150
Operating Cloth, large	12	8
Corrosive Gauze, pack	10	300
Soap	14	10
Absorbent Cotton, gr.	12	4.500
Paraffin, gr.	4	400
Skin Washing Brush	14	400
Splint No. 1	14	30
Splint No. 2	14	20
Splint No. 3	10	10
Splint No. 4	10	10
Copy Plate	14	3
Copy Pen	14	5
Copy Paper	14	25
Comb	7	2
Bandage, Pack	11	50
Monthly Report for Med. Materials	14	1
Monthly Report of Patients	14	1
Admittance, A		
Admittance, B		
Report on Patient Used Consumptions	14	150
Report of Patients, 3 times a month	14	40
Report of repaired machines	14	1
List of Machines	14	1
Prescription book	14	5
Patient's Roster	14	1
Table of Patients temperature	14	500
Personal list of patients	14	100
Paper, drawing	14	70
Clinical diary, No. 1	14	6
Clinical Diary, No. 2	14	5
Report of Medicine	14	1
Silk Threads preserved in formalin		
No. 2 pack	14	25
No. 4	14	25
No. 6	14	50
No. 7	14	50
Matches, box	4	10
Cotton Cloth	11	10
Medical packing paper	7	700
Candle	4	30
Cotton, gr.	11	4.500